

# Ernesto Joselevich

## CURRICULUM VITAE

Rehovot, August 2018

### A. Personal Details

Name: Ernesto Joselevich

Academic degree: PhD.

Date and place of birth: March 3, 1968, Buenos Aires, Argentina.

Date of immigration: July 29, 1986.

Citizenship: Argentina, Spain, Israel permanent residence.

Marital status: Married, 4 children (ages 16, 13, 10, 10).

Addresses and contact information:

Laboratory: Department of Materials and Interfaces, Weizmann Institute of Science,  
Rehovot 76100, Israel.

Residential: Bustanai 10/14, Rehovot 76289, Israel.

Tel. (office) +972-8-9342359; (mobile) +972-54-5247173; Fax: +972-8-9344138 (Department)

Home page: <http://www.weizmann.ac.il/materials/ernesto>

E-mail : [ernesto.joselevich@weizmann.ac.il](mailto:ernesto.joselevich@weizmann.ac.il)

### B. Education

**1998 - 2000** Postdoctoral associate at Harvard University with Prof. Charles M. Lieber, working on nanostructured materials (including carbon nanotubes), chemical force microscopy and biophysical chemistry

**1997** Postdoctoral period at the Hebrew University of Jerusalem with Prof. Itamar Willner, setting up scanning probe microscopy facilities (AFM, STM, NSOM and Electrochemistry)

**1997** Ph.D. from the Hebrew University of Jerusalem

**1990 - 1996** Graduate studies in Chemistry under the supervision of Prof. Itamar Willner. Title of thesis: "Control of Photochemical Processes by means of Organized Systems and Microheterogeneous Environments"

**1989** B.Sc. degree in Chemistry, *summa cum laude* (average grade: 95), from the Hebrew University of Jerusalem

**1986 - 1989** B.Sc. studies in Chemistry at the Hebrew University of Jerusalem

**1985 - 1986** First year of B.Sc. studies in Chemistry at the Universitat Autònoma de Barcelona, Spain

**1981 - 1985** High School, mathematics and physics section.

## C. Employment History

- 2016** Full Professor at the Weizmann Institute, Department of Materials and Interfaces (from October 2016).
- 2008 -2016** Associate Professor at the Weizmann Institute, Department of Materials and Interfaces (from November 2008).
- 2001 - 2008** Senior Scientist at the Weizmann Institute, Department of Materials and Interfaces (from April 2001).

## D. Academic Administration

- 2014 -** Director of the Helen and Martin Kimmel Center for Nanoscale Science at the Weizmann Institute
- 2013 - 2016** Member of the Weizmann Faculty Candidates Review Committee (“Vaadat 9”)
- 2012 – 2016** Coordinator of the Faculty of Chemistry Colloquium, Weizmann Institute
- 2010 - 2013** Weizmann representative at the Executive Board of the Israel Chemical Society
- 2010 - 2013** Services Committee, Weizmann Institute
- 2010 - 2013** Chemistry representative in the Weizmann Library Committee
- 2007 – 2013** Member of 10-20 different national grants, fellowships and prize committees.
- 2003 – 2006** Equipment Review Committee for the Faculty of Chemistry, Weizmann Institute
- 2003 - 2004** Delegate of the Chemistry senior scientists at the Scientific Council, Weizmann Institute
- 2003** Coordinator of the Ulpana De-Shalit for 1st and 2nd year Chemistry students
- 2001 - 2006** Coordinator of Materials Research Seminars, Department of Materials and Interfaces, Weizmann Institute

## E. Other Appointments

### Courses taught at the Weizmann Institute:

- 2009 - 2019** Nanomaterials
- 2003 - 2006** Physical Chemistry 1B (Kinetics)
- 2002** Masters Seminar Course

### Courses taught before present appointment (Hebrew University of Jerusalem):

- 1992 - 1995** Assistant teacher of Organic Chemistry for 2nd-year Chemistry students
- 1990 - 1994** Tutor of Advanced Organic Chemistry Laboratory for 3rd-year Chemistry students
- 1990 - 1992** Assistant teacher of Organic Chemistry for 1st-year Biology students
- 1990 - 1992** Tutor of Organic Chemistry Laboratory for 1st-year Medicine students

## **Membership in committees**

**2014-2015** US-Israel Binational Science Foundation (BSF) Review Committee.

**2012-2013** Pazy (Israel Atomic Energy Commission) Review Committee.

**2009-2014** Member of the Executive Board of the Israel Chemical Society.

**2008-2009** Ministry of science and technology (MOST) review committee.

**2004-2016** Israel Science Foundation (ISF) Review Committee (several years)

## **Consulting activities**

**2012-2014** Consultant for Israeli defense industries.

## **F. International Recognition**

### **Prizes and awards**

**2016** Tenne Family Prize in memory of Lea Tenne for Nanoscale Sciences.

**2014** European Research Council (ERC) Advanced Grant for 5 years.

**2014** Ultratech Cambridge NanoTech Best Paper Award.

**2007** Israel Chemical Society Excellent Young Scientist Prize.

**2006** Weizmann Scientific Council Award “for his discovery of the phenomenon of carbon nanotubes growth with a specific direction and the understanding of the growth mechanism”.

**2001** Bergman memorial award from the US-Israel Binational Science Foundation

**2001** Alon Fellowship for young scientist in Israel (for 3 years).

**1997** Academic training fellowship from the Hebrew University of Jerusalem for a postdoctoral stay at Harvard.

**1995** Haas Family Award for outstanding achievements in the Ph.D. research.

**1991** Wolf Foundation Award for outstanding achievements in the M.Sc. research.

**1989** Rector's Award for outstanding achievements in the B.Sc. studies.

**1989** Dean's List of Excellency (3<sup>rd</sup> year B.Sc.).

**1988** Dean's List of Excellency (2<sup>rd</sup> year B.Sc.).

**1987** Mention of Honor of the Knesset (The Israeli Parliament) for new immigrant's achievements in the first year of B.Sc. studies. Ceremony held at the Israeli Parliament.

### **International Organizing Committees**

**2015** *International Materials Research Conference (IMRC)2015*, jointly organized by the American Materials Research Society (MRS) and the Sociedad Mexicana de Materiales (SMM), Cancun (Mexico), August 16-20: **Conference Chair**; appointed by the President of the MRS.

## **International Review Boards**

- 2018** DFG review panel on Clusters of Excellence, NH Frankfurt Mörfelden Conference Center, Frankfurt (Germany), April 18-20.
- 2015** AMBER Research Centre progress review, Science Foundation Ireland, Trinity College, Dublin (Ireland), November 15-17.

## **Invited talks at international meetings**

**2018 Materials Research Society (MRS) Fall Meeting, Boston (U.S.A.), November 25–30**

**Title: “Guided Nanowire Optoelectronics”**

- 2018** *ICNT+T 2018*, BRNO (Czech Republic), July 22-27.

Title: “Guided Nanowire Optoelectronics”.

- 2018** *NSP-2018* (International workshop and school Nanostructures for Photonics), St. Petersburg (Russia), May 7-12.

Title: “Guided Nanowire Optoelectronics”.

**2018 IWEPNM 2018 (International Winterschool on Electronic Properties of Novel Materials), Kirchberg (Austria), March 17-24.**

**Title: “Coiling and twisting nanotubes”.**

- 2017** *232nd ECS Meeting*, Washington (U.S.A.), October 1-5

Title: “Guided Nanowire Optoelectronics”

- 2017** *The 2017 World-Graphene Innovation Conference*, Changzhou (China), July 6-7.

Title: “Coiling and twisting nanotubes”.

- 2017** *NT17* (18th International Conference on the Science and Application of Nanotubes and Low-dimensional Materials) Belo Horizonte (Brazil), June 25-30.

Title: “Coiling and Twisting Nanotubes”.

- 2017** *V Congress of the Future*, Santiago (Chile), January 09-15.

Title: “New Challenges in Nanotechnology”.

- 2016** *CIMTEC 2016 - 7th Forum on New Materials*, Perugia (Italy), June 5-9.

Title: "Guided growth of nanowires".

- 2015** *Quimicuba 2015*- jointly organized by the Scientific Committee of the forthcoming IX International Congress on Chemical Sciences, Technology and Innovation and the organizers of a symposium on “Nano and Supramolecular Chemistry”, Havana (Cuba), October 13-16.

Title: “Shaping Nanotubes and Nanowires with Surfaces”. **(Keynote Lecture)**

- 2015** *"Flatlands beyond graphene" conference*, Bar Ilan University (Israel), July 7-9.

Title: “Nanotube Torsion Beyond Carbon”

- 2015** *Materials Research Society (MRS) Spring Meeting*, San Francisco (U.S.A.), April 6-10.

Title: "Guided Growth of Horizontal Nanowires: A General Approach to Structural Control and Large-Scale Integration".

- 2014** *Materials Research Society (MRS) Fall Meeting*, Boston (U.S.A.), November 30 – December 5. Title: "Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems".
- 2014** *2nd ERC Grantees Conference "Frontiers in Chemistry – The Basis for Advanced Materials"*, Berlin, Germany, August 28-29: "Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems".
- 2014** *International Materials Research Conference (IMRC) 2014*, Cancun (Mexico), August 12-17: "Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems".
- 2014** *ICN+T 2014*, Vail, Colorado (U.S.A.), July 20-25: "Guided Nanowires: Building Blocks for Self-Integrated Nanosystems".
- 2014** *Nano2014*, Moscow (Russia), July 13-18: "Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems".
- 2014** *COMPO2014 Nanocomposites and Biocomposites*, Weizmann Institute, (Israel), April 28-May 1: "How do different nanotubes twist?".
- 2014** *American Physical Society (APS) March Meeting*, Denver (U.S.A.), March 2014: "Guided Growth of Horizontal Nanowires: A New Path to Self-Integrated Nanosystems".
- 2013** *Nanowires-2013*, Weizmann Institute, Rehovot (Israel), November 12-15: "Self-integration of nanowires into circuits via guided growth".
- 2013** *International Union of Materials Research Societies (IUMRS)*, Qingdao (China), September 22-28: "Guided Growth of Horizontal Nanowires: A New Path to Self-Integrated Nanosystems".
- 2012** *Nano2012 – 11<sup>th</sup> Conference on Nanostructured Materials*, Rhodes (Greece), August 26-31: "Guided Growth of Millimeter-Long Horizontal Nanowires with Controlled Orientations".
- 2012** *XXXV Encontro Nacional de Física da Matéria Condensada* (annual meeting of the Brazilian Physical Society), Águas de Lindóia (Brazil), 14-18 May: "Shaping nanotubes and nanowires with surfaces".
- 2011** *Electrochemical Society Meeting*, Montreal (Canada), May 1-6: "Shaping nanotubes and nanowires with surfaces".
- 2010** *Pacificchem*, Honolulu, Hawaii (USA), December 15-20: "Shaping carbon nanotubes with surfaces".
- 2010** *NanoIsrael*, Tel Aviv, (Israel), November 8-9: "How do different nanotubes twist?".
- 2010** *New Diamond and Nano Carbons 4<sup>th</sup> International Conference*, Suzhou, China, May 16-20: "Complex carbon nanotube patterns directed by crystal surfaces".
- 2010** *Transition Metal Chalcogenide and Halide Nanostructures (TMCN10)*, Weizmann Institute of Science, Israel, April 25-27: "Torsional Stick-Slip Behavior in WS<sub>2</sub> Nanotubes".
- 2009** *American Chemical Society (ACS) Meeting*, Washington, DC (USA), August 16-21: "Self-Organization of Complex Nanotube Patterns Directed by Crystal Surfaces".
- 2009** *Guadalupe Workshop – Nucleation and Growth mechanisms of Single-Wall Carbon*

*Nanotubes*, Boerne, Texas (USA), April 16-21: "Self-Organized Growth of Complex Nanotube Patterns on Crystal Surfaces"

- 2007** *Materials Research Society (MRS) Fall Meeting*, Boston (U.S.A.), November 26-30: "Torsional Electromechanics of Carbon Nanotubes".
- 2006** *Nanotube '06*, Nagano (Japan), June 18-23: "Epitaxial Approaches to Carbon Nanotube Organization". (**Plenary talk**)
- 2006** *Frontiers Winterschool – Understanding Processes at the Molecular Level*, Lenzewrheide (Switzerland), March 18-23: "Epitaxial Approaches to Carbon Nanotube Organization".
- 2005** *NanoteC05 – Nanotechnology in Carbon and Related Materials*, University of Sussex, Brighton (U.K.), August 31 – September 3: "Epitaxial Approaches to Carbon Nanotube Organization".
- 2005** *International Conference on the Chemistry of the Organic Solid State*, UCLA, Los Angeles (U.S.A), July 24-29: "Nanotube Formation along Atomic Steps".
- 2002** *12<sup>th</sup> International Symposium on Supramolecular Chemistry*, Eilat (Israel), October 6-11: "Carbon Nanotubes as Building Blocks in Molecular Electronics".
- 2001** *6<sup>th</sup> International Symposium on Polymers for Advanced Technologies*, Eilat (Israel), September 2-6: "Vectorial Growth of Carbon Nanotubes for Molecular Electronics".

#### **Contributed talks at international meetings**

- 2015** *International Materials Research Conference (IMRC) 2015*, Cancun (Mexico), August 16-20: "Guided Growth of Horizontal Nanowires: A General Approach to Structural Control and Large-Scale Integration".
- 2012** *Materials Research Society Meeting*, Boston (USA), November 25-30: "Guided Growth of Horizontal Nanowires".
- 2009** *Trends in Nanotechnology*, Barcelona (Spain), September 6-11: "Self-Organization of Complex Nanotube Patterns Directed by Crystals Surfaces".
- 2007** *American Physical Society Meeting*, Denver, Colorado, (U.S.A.), March 2007: "Torsional Electromechanics of Carbon Nanotubes".
- 2006** *Materials Research Society Spring Meeting*, San Francisco (U.S.A.), April 16-21: "Epitaxial Approaches to Carbon Nanotube Organization". (**talk selected "of special note"**)
- 2005** *American Physical Society Meeting*, Los Angeles, (U.S.A.), March 2005: "Atomic Step-Templated Formation of Single-Wall Carbon Nanotube Patterns".
- 2004** *Materials Research Society Fall Meeting*, Boston: "Atomic Step-Templated Formation of Single-Wall Carbon Nanotube Patterns".
- 2000** *Materials Research Society Fall Meeting*, Boston (U.S.A.), November 27- December 1: "Vectorial Growth of Carbon Nanotubes".

### **Poster presentations at international meetings**

- 2007** *Nanotube '07*, Ouro Preto, (Brazil), March 2007: “Torsional Electromechanics of Carbon Nanotubes” (1<sup>st</sup> poster), “Nanotube Epitaxy” (2<sup>nd</sup> poster).
- 2007** *International Winterschool on Electronic Properties of Novel Materials*, Kirchberg in Tirol, (Austria), March 2007: “Torsional Electromechanics of Carbon Nanotubes” (1<sup>st</sup> poster), “Nanotube Epitaxy” (2<sup>nd</sup> poster).
- 2007** *American Physical Society Meeting*, Denver, Colorado, (U.S.A.), March 2007: “Nanotube Epitaxy”.
- 2005** *Nanotube '05*, Gothenburg (Sweden), June 26 – July 1: “Atomic Step-Templated Formation of Single-Wall Carbon Nanotube Patterns”.

### **Invited talks at binational meetings**

- 2017** *Israel- Turkey workshop on Nanoscience & Nanotechnology, Weizmann Institute (Israel), December 19-20:” Guided Nanowire Optoelectronics”.* (Organizing Committee)
- 2016** *Weizmann- Alberta Nanoscience Meeting*, Weizmann Institute (Israel), March 28-30:” Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2015** *Israel-China Inter-Academy Symposium in Nanotechnology*, The Israel Academy of Sciences and Humanities, Jerusalem (Israel), July 5-7:” Shaping nanotubes and nanowires with surfaces”
- 2014** *Israel - Greece Joint Meeting on Nanotechnology and BioNanoscience*, Weizmann Institute (Israel), October 19-21:” Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2013** *Indo-Israel meeting on Materials Science and Nanoscience*, Kottayam and Bangalore (India), January 29-February 5: “How do different nanotubes twist” and “Guided Growth of Nanowires”.
- 2012** *Israel-China meeting on Nanotechnology* (satellite of *NanoIsrael2012*), Tel Aviv-Rehovot (Israel), March 28-29: “Guided Growth of Nanowires”
- 2008** *China-Israel Joint Symposium on Nanobiomaterials and Structures*, Beijing (China), October 27-30: "Self-Organization of Complex Nanotube Patterns on Crystals Surfaces".
- 2007** *Dutch-Israel Symposium – Molecular Materials*, November 18-20, Weizmann Institute of Science (Israel): “From Molecular Epitaxy to Nanotube Epitaxy”
- 2006** *India-Israel Symposium - From Molecules to Composites: Interdisciplinary approaches to Materials Research*, May 4-8, Jawaharlal Nehru Centre, Bangalore (India): “Epitaxial Approaches to Carbon Nanotube Organization”.
- 2006** *France-Israel Symposium on Diamond, Carbon Nano-structures and Related Materials*, March 6-7, Ein Bokek (Israel): “Epitaxial Approaches to Carbon Nanotube Organization”.
- 2005** *Nanotubes and Nanowires - Germany-Israel Foundation Meeting*, June 20-23, Dresden (Germany): “Atomic Step-Templated Formation of Single-Wall Carbon Nanotube

Patterns”.

- 2002** *Nanochemistry 2002 - Germany-Israel Workshop on the Fabrication, Characterization and Properties of Nanomaterials*, November 17-18, Rimonim-Neptune Hotel, Eilat (Israel): “Carbon nanotubes as building blocks for molecular electronics”. (Member of organizing committee)
- 2001** *Japan-Israel Binational Workshop on Diamond Science & Technology*, December 6-7, Kochi University of Technology, Tosayamada-cho, Kochi (Japan): “Carbon nanotubes as building blocks for molecular electronics”.
- 2001** *Switzerland-Israel Meeting, UCSB-WIS-ETHZ-EPFL Workshop on Advanced Materials*, September 9-13, Crêt-Berard, Puidoux, Lausanne (Switzerland): “Vectorial growth of carbon nanotubes for molecular electronics”.
- 2000** *Netherlands-Israel Meeting, Molecular Avenues in Material and Surface Science*, October 23-25, University of Twente (The Netherlands): “Vectorial growth of carbon nanotubes for molecular electronics circuitry and computing”.

### **Invited Seminars abroad**

- 2017** Google X, *Alphabet X Labs*, San Francisco (U.S.A.), October 2: “Guided Nanowire Optoelectronics”.
- 2017** Universidad Nacional San Martin (UNSAM). Buenos Ares (Argentina), July 3: “Nanohilos Guiados: Nuevas Piezas de Construcción para el Autoensablaje de Nanosistemas”.
- 2017** Instituto Nacional de Tecnología Industrial (INTI) joint Fundacion Argentina de Nanotecnología (FAN) and Universidad Nacional San Martin (UNSAM). Buenos Ares (Argentina), January 20: “Nanohilos Guiados”.
- 2016** *CEITEC – Central European Institute of Technology*. Brno (Czech Republic), November 30: “Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2016** *Institut Català de Nanociència i Nanotecnologia (ICN2)*, Bellaterra, CAT (Spain), Jul 11: “Twisting and Winding Nanotubes”.
- 2016** *Universidad de Buenos Aires (UBA)*, Buenos Aires (Argentina), March 7: “Nanohilos Guiados: Nuevas Piezas de Construcción para el Autoensablaje de Nanosistemas”.
- 2015** *UNAM, National Nanotechnology Research Center Colloquium*, Bilkent University, Turkey, March 13: “Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2014** *UCLA (U.S.A.) – Materials Science and Engineering Seminar*, June 20: “Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2014** *Caltech (U.S.A.) – Applied Physics Seminar*, June 19: “Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2014** *UC Berkeley – Molecular Foundry (U.S.A.)*, June 13: “Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems”.
- 2014** *Northwestern University, NU-MRSEC Seminar*, Evanston, Illinois (U.S.A.), March 10: “Guided Growth of Horizontal Nanowires: A New Path to Self-Integrated Nanosystems”.
- 2014** *Institut de Ciències Fotoniques y Optiques (ICFO)*, Castelldefels, Barcelona (Spain), January 30: “Guided Growth of Horizontal Nanowires: A New Path to Self-Integrated



Nanosystems”.

- 2014** *Institut de Ciència de Materials de Barcelona (ICMAB)*, Bellaterra, Barcelona (Spain), January 27: “Guided Growth of Horizontal Nanowires: A New Path to Self-Integrated Nanosystems”.
- 2013** *Air Force Research Laboratory (AFRL)*, Wright-Patterson Air Force Base, Dayton, Ohio (U.S.A.), November 19: “How do different nanotubes twist? and how they could be used to make a nanogyroscope?”.
- 2013** *Tata Institute of Fundamental Research (TIFR)*, Mumbai (India), February 8: “Guided growth of nanowires”.
- 2013** *Indian Institute of Science*, Inaugural Ceremony of IEEE Nanotechnology Council and Sensors Council Joint Student Chapter, Bangalore (India), February 6: “How do different nanotubes twist?”.
- 2012** *Columbia University*, New York City (U.S.A.), December 5: “Guided Growth of Horizontal Nanotubes and Nanowires”.
- 2012** *IBM Thomas J Watson Research Center, Yorktown Heights*, New York (U.S.A.), December 4: “Guided Growth of Horizontal Nanotubes and Nanowires”.
- 2012** *Universidad de Buenos Aires, Chemistry Seminar*, Buenos Aires (Argentina), May 28: “Domando Nanotubos y Nanohilos: Alinear, Cruzar, Ondear, Enrollar y Retorcer”.
- 2012** *Universidade Federal de Minas Gerais, Physics Seminar*, Belo Horizonte (Brazil), May 22: “Nanotubes and Nanowires: Aligning, Crossing, Waving, Winding & Twisting”.
- 2007** *Harvard University, Chemistry Seminar (Pfizer Hall)*, Cambridge, Massachusetts (U.S.A.), March 2: “Taming Carbon Nanotubes: Aligning, Crossing, Waving & Twisting”.

#### **Reviewer for the following scientific journals**

- Science
- Nature Nanotechnology
- Nature Communications
- Nature Materials
- Nano Letters
- ACS Nano
- Angewandte Chemie
- Advanced Materials
- Journal of the American Chemical Society
- Small
- Journal of Physical Chemistry B
- ChemPhysChem
- Chemistry of Materials
- Chemical Communications
- Applied Physics Letters
- Nano Research
- Journal of Physics A

- Nanotechnology
- Scientific Reports

## G. Scientific Productivity

### Competitive national and international grants

- 2015 - 2017 Torsion** of carbon and inorganic nanotubes: From fundamental studies to a “nanotube gyro”  
United States Air Force (AFOSR) and Office of Naval Research (ONR)  
Total amount: \$150,000
- 2014 - 2018 Guided Nanowires: From Growth Mechanism to Self-Integrating Nanosystems**  
European Research Council (ERC) Advanced Grant  
Total amount: \$2,744,000
- 2012- 2016 Inorganic nanotubes (INT): from nanomechanics to improved nanocomposites**  
Focal Technology Area – Israel National Nanotechnology Initiative, in collaboration with another 7 research groups in Israel  
Total amount: \$422,000
- 2010 - 2014 Surface-Directed Nanotubes and Nanowires**  
Israel Science Foundation (ISF) Total amount: \$272,000
- 2012 – 2014 Horizontal epitaxial and graphoeptiaxial nanowires: Synthesis, characterization and devices**  
Minerva Stiftung for Germany-Israel Cooperation  
Total amount: \$200,000
- 2010 - 2013 Boron Nitride Nanotubes for Nanoelectromechanical Systems and Nanocomposites**  
Research and Development Directorate of the Israeli Ministry of Defense (MAFAT), in collaboration with Dr. Oded Hod (Tel Aviv University)  
Total amount: \$159,000
- 2008 - 2014 Processes for the Production of Nanogyroscopes**  
Research and Development Directorate of the Israeli Ministry of Defense (MAFAT)  
Total amount: \$396,000
- 2008 - 2010 Torsional Electromechanics of Carbon Nanotubes**  
Minerva Stiftung for Germany-Israel Cooperation  
Total amount: \$200,000
- 2005-2009 Surface-Directed Self-Assembled Nanosystems**  
Israel Science Foundation (ISF) Total amount: \$243,000
- 2005-2009 Carbon Nanotube Epitaxy: Microscopic, Spectroscopic and Crystallographic Studies**  
US-Israel Binational Science Foundation (BSF), in collaboration with M.I.T.  
Total amount: \$140,000
- 2001-2005 Design, Elaboration and Characterization of Novel Nanometer-Scale Materials and Tools: Chemistry of One-Dimensional Nanostructures and Chemical Force Microscopy**  
Israel Science Foundation (ISF) Personal grant: \$240,000

Equipment:	\$360,000
Total amount:	\$600,000

**2001-2004 Stereochemistry of Carbon Nanotubes: Microscopic and Spectroscopic Studies**

US-Israel Binational Science Foundation (BSF), in collaboration with Harvard and M.I.T. Total amount: \$125,000

**2001-2004 Alon Fellowship for young scientists in Israel** Personal grant: \$30,000  
 PI salary: \$234,000  
 Total amount: \$264,000

**GRAND TOTAL COMPETITIVE GRANTS \$5,915,000**

**Students, postdoctoral fellows and formation of young Faculty Former students:**

- (1) Ariel Ismach: MSc (2003): “Decoration of atomic steps by single-wall carbon nanotubes”. Thesis qualification: **95**. PhD (2004-2008): “Carbon Nanotube Orientational Epitaxy: Concept, Characterization and Nanoscale Devices”. Student poster award at the Israel Vacuum Society Meeting (2004). Outstanding PhD student prize from the Israel Chemical Society (2008). Postdocs at UC Berkeley and UT Austin (currently). Accepted **Faculty position at Tel Aviv University** (starting October 2014).
- (2) Lior Segev: MSc (2003): “Torsional carbon nanotube nanoelectromechanical systems”. Thesis qualification: **95**. Current position: Staff Scientist at Weizmann.
- (3) Amir Lichtenstein: Postdoctoral fellow (2003). Current position: Staff scientist at Tel Aviv University.
- (4) Onit Srur-Lavi: MSc (2004): “Torsional Electromechanics of Carbon Nanotubes”. Thesis qualification: **95**. Current position: Electrochemistry Group Leader at Tadiran Batteries Ltd.
- (5) Tzahi Cohen-Karni: MSc (2006): “Torsional Electromechanics of Carbon Nanotubes”. Thesis qualification: **97**. Awarded Feinberg Graduate School Dean’s Prize. PhD at Harvard University, with Prof. Charles M. Lieber. Postdoc at MIT, with Robert Langer. Current position: y: **Faculty position at Carnegie Mellon University**.
- (6) Ilya Shlar: MSc (2005): Thesis title: Biotemplated Array of One-Dimensional Nanostructures. Thesis qualification: **87**. Current position: Industrial employment.
- (7) David Kantorovich: MSc (2006): “Elaboration and Electrical Characterization of Epitaxial Carbon Nanotubes”. Thesis qualification: **91**. Current position: Intel Corp., Kiryat Gat.
- (8) Rachel Gabaj: PhD (2007-2011): “Patterning and Mapping Molecules and One-Dimensional Nanostructures at Surfaces via Hierarchical Self-Assembly and Entropic Control”. Current position: Start-up Biotech company.

- (9) Noam Geblinger: MSc (2007): “Self-Organized Nanotube Serpentes”. Thesis qualification: **94**. Student poster award at the *2007 Israel Chemical Society Meeting*. Student poster award at the *2007 Israel Vacuum Society Meeting*. Current position: Israel Aerospace Industry.
- (10) Tohar S. Yarden: MSc (2009): “Drawing with Nanotubes: Creating Nanowires with Complex Geometries by Electrodeposition on Self-Organized Carbon Nanotubes”. Thesis qualification: **92**. Current position: PhD in Brain Science at the Hebrew University of Jerusalem.
- (11) Nitzan Shadmi: MSc (2009): “Self-Organization of Curved Nanotube Structures on Surfaces: Formation Mechanism and Inductive Properties”. Thesis qualification: **95**.
- (12) K.S. Nagapriya: Postdoc (2007-2010): “Torsional electromechanics of carbon and inorganic nanotubes”. Current position: General Electric, Bangalore, India.
- (13) Xun Wendy Gu: Fulbright fellow from UC Berkeley (2011). Current position: postdoc at Berkeley.
- (14) Tal Bronstein: MSc (2011): “Guided Growth of Nanowires: Mechanism and Surface Perturbation Effects”. Thesis qualification: **88** Current position: Tower Semiconductor, Israel.
- (15) Shulamit Marks: MSc (2012): Guided Growth of Mg-Doped GaN Nanowires: Synthesis and Electrical Characterization”. Thesis qualification: **86** Current position: maternity leave.
- (16) Lior Goren-Ruck: MSc (2012-2014): Guided Growth of GaN Nanowires on Quartz and Their Transfer to Other Substrates. Thesis qualification: **94** Current position: Leadspace, Inc
- (17) Jonathan Garel: PhD (2014): “Torsional Behavior and Nanoelectromechanical Systems of Carbon and Inorganic Nanotubes”. Current position: El-Mul Technologies, Ltd.
- (18) Mark Schwartzman: Postdoc (2012-2014). “Self-Integration of Nanowires Into Circuits by Guided Growth” Current position: a Senior Lecturer – Department of Materials Engineering, Faculty of Engineering Science, Ben-Gurion University of the Negev.
- (19) Assaf Yaakovovitz: Postdoc (2012-2014). “Dynamic studies of nanotube torsion”. Current position: a Researcher at the Department of Mechanical Engineering, Faculty of Engineering Science, Ben-Gurion University of the Negev.
- (20) David Tsivion: PhD (2009-2014). “Guided Growth of Horizontal Nanowires”. Current position: Own Start-up Company.
- (21) Gilad Reut: MSc. (2012-2014). “Guided Growth of Horizontal p-Type ZnTe Nanowires”. Thesis qualification: **93**. Current position: an Application Engineer at Applied Materials.

- (22) Ella Sanders: MSc. (2012-2015). “Controlling the Electrical Properties of Guided GaN Nanowires”. Thesis qualification: **91**. Current position: PhD in my group.
- (23) Nitzan Shadmi: PhD (2010-2015): “Carbon Nanotube Solenoids: Synthesis, Characterization, and Inductive Properties” Current position: Materials scientist at StoreDot.
- (24) Yiftach Divon: MSc. (2013-2016) “A comparative study of the torsional oscillatory behavior of various nanotubes and nanowires” Current position: PhD student at Bar-Ziv Group, WIZ.
- (25) Erga Shalev: MSc. (2013-2016) “Guided growth of CdSe nanowires” Current position: Process Investigator at Landa digital printing.
- (26) Hadassah Dukes: MSc. (2014-2017) “Guided growth of nanowires by artificial epitaxy”. Current position: Yield engineer at Intel.
- (27) Roi Levi: PhD and Postdoc (2010-2018) “Electrical, Electro-mechanical and Electro-optical properties of Inorganic Nanotubes” (Joint student with Prof. Reshef Tenne). Current position: Materials R&D at Orbotech .
- (28) Dror Cohen: MSc. (2016-2018) “Guided growth of PbSe nanowires”.
- (29) Dan Yudilevich: MSc. (2016-2018) “Dynamic electromechanical characterization of nanotubes and nanowires for torsional nano-resonators”. Current position: Ph.D. at Finkler group, Department of Chemical and Biological Physics, WIZ.
- (30) Xu Jinyou: Postdoc (2014-2018) “Guided nanowires of graded composition for optoelectronics”. currently a PI at South China Academy of Advanced Optoelectronics, South China Normal University

- Rotation students (excluding those who stayed for MSc): Elad Dinar, Reuven Levitt, Yuri Tulchinsky, Andrey Shalit, Hamutal Arbel, Jonathan Berson, Gilad Gotesman, Atalia Birman, Roy Har-Tsvi, Roi Levi, Dvir Gur, Amir Tal, Fabian Schwartzman, Nir Eliyahu, Yotam Asher, Yael Tsarfati, Hanna Aharon, Elad Matatia, Yaara Bondi, Neta Elool, Nir Funt, Merna Elsousou, Moran Atiya, Reuven Falkovich, Yarden Danieli.
- Summer students: Manis Jaroslav (PhD from CEITEC, Brno), Dikla Raz (Postdoc University of Pennsylvania), Toni Fröhlich (Germany), Ruben Waldman (Undergraduate Researcher at A.T. Charlie Johnson Research Group at the University of Pennsylvania).
- Volunteers: Maximin Salles (Ingenieur brevets at PSA, France), Siriwat Chhem (Canada).

**Present students (total 8):**

**Postdocs:**

Eitan Oksenberg: “Guided nanowires of optoelectronic materials: synthesis, characterization and devices”

#### **PhD students:**

Regev Ben-Zvi: “Optical and optoelectronic properties of guided nanowires”.

Ella Sanders: “Novel nanowire architectures via guided growth”.

Amnon Rothman: “Mechanistic Studies on the Guided Growth of Nanowires”

#### **MSc students:**

Dekel Nakar: “Self-coiled carbon nanotube solenoids”

Dalit Stolovas: “Optical and electronic properties of misfit compound nanotubes” (Joint student with Prof. Reshef Tenne).

Shiri Dishon:” Light-emitting diodes based on guided nanowires”

Tamir Forsht: “Novel low-dimensional layered materials”

#### **National and international collaborators:**

- Yoshio Bando (NIMS, Japan)
- Ron Blonder (Weizmann Institute, Israel)
- Helio Chacham (UFMG, Brazil)
- Mildred S. Dresselhaus (MIT, USA)
- Ron Folman (Ben Gurion University, Israel)
- Douglas S. Galvão (UNICAMP, Brazil)
- Dmitri Golberg (MANA, NIMS, Japan)
- Oded Hod (Tel Aviv University)
- Ado Jorio (UFMG, Brazil)
- Beena Kalisky (Bar Ilan University, Israel)
- Leeor Kronik (Weizmann Institute)
- Bernardo R. A. Neves (UFMG, Brazil)
- Lukas Novotny (University of Rochester)
- Gotthard Seifert (Technische Universität Dresden, Germany)
- Reshef Tenne (Weizmann Institute)
- David Tománek (University of Michigan)
- Wenlong Wang (Chinese Academy of Sciences, Beijing, China)

## **H. Patents**

### **List of patents**

#### (1) NANOMETER-SCALE MICROSCOPY PROBES

Inventors:

C.M. Lieber, S.S. Wong, A.T. Woolley and E. Joselevich.

All rights assigned to the President and Fellows of Harvard College, Cambridge, Massachusetts, U.S.A.

Filed in June 1998.

**United States Patent 6,159,742**

Licensed to Nanosystems, Inc., Massachusetts.

- (2) MOLECULAR WIRES, ARRAYS, AND METHODS OF THEIR MANUFACTURE  
Inventors:  
C.M. Lieber, T. Rueckes, E. Joselevich and K. Kim.  
All rights assigned to the President and Fellows of Harvard College, Cambridge, Massachusetts, U.S.A.  
Filed in May 1999.  
**United States Patent Application 20020130353**, December 12, 2000.  
Licensed to Nantero, Inc., Massachusetts, and Nanosystems, Inc., Massachusetts.
- (3) PRODUCING AN ARRAY OF NANOSCALE STRUCTURES ON A SUBSTRATE SURFACE VIA A SELF-ASSEMBLED TEMPLATE  
Inventors:  
E. Joselevich, R. Gabai and A. Ismach.  
Weizmann Institute of Science, through Yeda Ltd., Rehovot 76100, Israel  
Filed in February 2007.
- (4) ELECTROMECHANICAL DEVICES BASED ON METAL-CHALCOGENIDE NANOTUBES  
Inventors:  
E. Joselevich, R. Tenne, Y Divon, R. Levi and A. Yaakovitz.  
Weizmann Institute of Science, through Yeda Ltd., Rehovot 76100, Israel  
**WIPO PCT 2018/122848 A1, July 05, 2018**

### **Involvement with companies**

#### **Invited talks at companies:**

- Motorola
- Rafael
- Intel
- HP-Indigo
- El-Op
- Advanced Materials

#### **Consultant for companies:**

- El-Mul: Voluntary consulting. Contract offer kindly declined.

### **I. Languages**

- Spanish: 3 mother tongue (reading, writing, speaking)
- Hebrew: 3 mother-tongue level (r,w,s)
- English: 3 fluent (r,w,s)
- French: 3 fluent (r,w,s)
- Catalan: 3 fluent (r,w,s)
- Portuguese: 2 (r,s)
- Arabic: 1 basic (literary and spoken).